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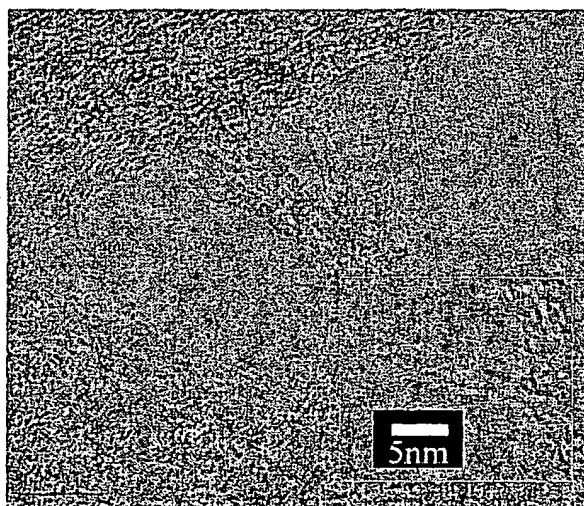
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(54) Title: SIDEWALL FUNCTIONALIZATION OF CARBON NANOTUBES WITH HYDROXYL-TERMINATED MOIETIES



(57) Abstract: The present invention is directed to methods of forming sidewall-functionalized carbon nanotubes, wherein such functionalized carbon nanotubes have hydroxyl-terminated moieties covalently attached to their sidewalls. Generally, such methods involve chemistry on carbon nanotubes that have first been fluorinated. In some embodiments, fluorinated carbon nanotubes ("fluoronanotubes") are reacted with mono-metal salts of a dialcohol, MO-R-OH, where M is a metal and R is hydrocarbon or other organic chain and/or ring structural unit. In such embodiments, -O-R-OH displaces -F on the nanotube, the fluorine leaving as MF. Generally, such mono-metal salts are formed in situ by the addition of MOH to one or more dialcohols in which the fluoronanotubes have been dispersed. In some embodiments, fluoronanotubes are reacted with amino alcohols, such as being of the type H<sub>2</sub>N-R-OH, wherein -N(H)-R-OH displaces -F on the nanotube, the fluorine leaving as HF.

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